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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,986	09/26/2005	Giampiero Morini	FE 6094 (US)	4669

34872 7590 01/25/2008  
Basell USA Inc.  
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EXAMINER
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CHOI, LING SIU

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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01/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,986	<b>Applicant(s)</b> MORINI ET AL.	
	<b>Examiner</b> Ling-Siu Choi	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 11-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8,9 and 11-23 is/are rejected.
- 7) ☒ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/30/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. The request filed on October 30, 2007 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/550986 is acceptable and a RCE has been established. An action on the RCE follows.

2. This Office Action is in response to the Preliminary Amendment filed 09/26/2005. Claim 10 was canceled and claim 23 has been added. Claims 1-9 and 11-23 are now pending.

***Claim Analysis***

3. Summary of claim 1:

An adduct comprising $\text{MgCl}_2 \cdot (\text{EtOH})_m(\text{ROH})_n(\text{H}_2\text{O})_p$	
R	a C <sub>1-15</sub> hydrocarbon group excluding ethyl, optionally substituted with at least one group comprising a heteroatom;
n, m	indexes > 0 satisfying the equations $(n+m) \geq 0.7$ and $0.05 \leq n/(n+m) \leq 0.95$ ;
p	a number ranging from 0 to 0.7
with the proviso that when <u>R is methyl and (n+m) is in the range of 0.7 to 1,</u> the value of <u><math>n/(n+m)</math> ranges from 0.05 to 0.45</u>	

***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 8-9, and 11-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Invernizzi et al. (US 4,506,027 = EP 0 123 767 A).

Invernizzi et al. disclose a supported Ziegler catalyst for olefin polymerization, obtained by reacting an organometallic compound of aluminum and an activated solid support in an inert solvent, followed by reacting with a titanium halide and a vanadium halide in the presence of an inert diluent, wherein the activated solid support is prepared by spray-drying of a solution of magnesium chloride in a mixture of ethanol and methanol in a weight ratio of ethanol to methanol from 0.5:1 to 2.5: 1 (claim 1). Attention is drawn to Table 1, wherein %EtOH = wt% of ethanol in the support and  $R_3$  = ethanol/methanol weight ratio in the support. Thus, wt% of magnesium chloride can be calculated as (100% - %EtOH - %MeOH). Accordingly, calculated (n + m) and  $[n / (n + m)]$  are summarized as follows when R = Me:

Example	%EtOH	%MeOH	m (EtOH)	n (MeOH)	n+m	n / (n+m)
1	14.2	7	0.37	0.27	0.64	0.42
4	14	2.3	0.34	0.08	0.42	0.19
<u>8</u>	<u>18</u>	<u>12</u>	<u>0.54</u>	<u>0.51</u>	<u>1.05</u>	<u>0.49</u>
9	7.5	15	0.20	0.58	0.78	0.74

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10	7.5	15	0.20	0.58	0.78	0.74
11	16	4	0.42	0.16	0.58	0.28
14	8	6	0.19	0.21	0.40	0.53
15	7.5	15	0.20	0.58	0.78	0.74

In view of Example 8, since methanol is used in combination with ethanol and  $n+m = 1.05$  which falls out of the range of 0.7-1, the ratio of  $[n/(n+m)]$  will not be required to meet the proviso. And it falls into the range of 0.05-0.95. Thus, the support disclosed in Example 8 meet the limitations set in the present claims. Invernizzi et al. further disclose the cocatalyst is alkyl aluminium or alkyl aluminium halide (claim 2). Accordingly, the present claims are anticipated by the disclosure of Invernizzi et al.

### ***Allowable Subject Matter***

6. Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Invernizzi et al. (US 4,506,027) do not teach or fairly suggest an adduct comprising  $\text{MgCl}_2 \cdot (\text{EtOH})_m(\text{ROH})_n(\text{H}_2\text{O})_p$  having (A)  $(n+m) \geq 1$  [or 2-5] and  $0.05 \leq n/(n+m) \leq 0.95$  and (B)  $n / (n+m) = 0.05 - 0.45$  when R is methyl and  $(n+m) = 0.7 - 1$ ;  $\text{MgCl}_2 \cdot (\text{EtOH})_m(\text{ROH})_n(\text{H}_2\text{O})_p$  having (A)  $(n+m) \geq 0.7$  and  $n/(n+m) = 0.1-0.4$  [or 0.15-0.35] and (B)  $n / (n+m) = 0.05 - 0.45$  when R is methyl and  $(n+m) = 0.7 - 1$ ; or  $\text{MgCl}_2 \cdot (\text{EtOH})_m(\text{ROH})_n(\text{H}_2\text{O})_p$  having (A)  $(n+m) \geq 0.7$  and  $0.05 \leq$

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$n/(n+m) \leq 0.95$ ; (B)  $n / (n+m) = 0.05 - 0.45$  when R is methyl and  $(n+m) = 0.7 - 1$ ; and

(C)  $p = 0.01-0.6$  [ or  $0.01-0.4$ ].

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Sacchetti et al. (US 5,221,651 = EP 0 395 083 A), and Tanaglia et al. (US 5,374,695 = EP 0 544 340 A).

Sacchetti et al. disclose a MgCl<sub>2</sub>/ROH adduct, wherein R is an alkyl, cycloalkyl or alkylaryl radical with 1-12 carbon atoms and 0.2-2 moles of alcohol per mole of MgCl<sub>2</sub> (claim 1). However, Sacchetti et al. do not teach or fairly suggest an adduct comprising MgCl<sub>2</sub> • (EtOH)<sub>m</sub>(ROH)<sub>n</sub>(H<sub>2</sub>O)<sub>p</sub> having (A)  $(n+m) \geq 0.7$  and  $0.05 \leq n/(n+m) \leq 0.95$  and (B)  $n / (n+m) = 0.05 - 0.45$  when R is methyl and  $(n+m) = 0.7 - 1$ .

Tanaglia et al. disclose a solid support and granular MgCl<sub>2</sub>, obtained (A) by spray drying an alcohol solution of **MgCl<sub>2</sub>** and having an alcohol hydroxyl content of 18 to 25% by weight, expressed as a weight of **ethanol**, is suspended in a liquid hydrocarbon solvent and an aliphatic alcohol R'-OH, wherein R' is an alkyl radical, linear or branched, containing from 1 to 5 carbon atoms; (B) adding a titanium tetra-alkoxide Ti(OR)<sub>4</sub>, wherein R is an alkyl radical, linear or branched, containing from 1 to 8 carbon atoms, to the suspension thus obtained, with a molar ratio R'-OH/MgCl<sub>2</sub> of 0.5:1 to 1.5:1 and with a molar ratio MgCl<sub>2</sub> / Ti(OR)<sub>4</sub> of 0.3:1 to 3:1; (C) heating the suspension until a homogeneous solution is obtained; and (D) cooling the solution to precipitate a granular

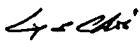
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solid (col. 2, lines 14-39). Thus, Tanaglia et al. do not teach or fairly suggest the claimed adduct comprising  $\text{MgCl}_2 \cdot (\text{EtOH})_m(\text{ROH})_n(\text{H}_2\text{O})$  having (A)  $(n+m) \geq 0.7$  and  $0.05 \leq n/(n+m) \leq 0.95$  and (B)  $n / (n+m) = 0.05 - 0.45$  when R is methyl and  $(n+m) = 0.7 - 1$ .

### **Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.

  
LING-SUI CHOI  
PRIMARY EXAMINER

January 22, 2008